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NOTES ON THE GENUS SAMBUCUS*

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There has recently appeared † a very interesting review of the genus *Sambucus*, by Fritz Graf von Schwerin, of Wendisch-Wilmersdorf, Brandenburg. It includes the species of the whole world, discussing them from every point of view, giving maps to illustrate distribution, and numerous figures, including a beautiful colored plate of the fruits. The genus is divided into seven groups; Ebulus, Eusambucus, Heteranthe, Scyphidanthe, Botryo-Sambucus, Tetrapetalus, and Tripetalus. In the first five, the corolla is five-lobed, in the manner normal for Caprifoliaceae ; but the last two have it four- and three-lobed respectively. Tetrapetalus has a single species, confined to Australia and Tasmania ; while Tripetalus has also only one representative, exclusively Australian. The austral distribution of these aberrant groups has naturally suggested the idea that they are the oldest members of the genus ; and this conception is illustrated in a phylogenetic tree on p. 11, where Tripetalus appears as the stem-form, and Tetrapetalus, as a lateral branch near the base. In Tripetalus the fruits are golden-yellow, and hence it might be supposed that the yellow mutations found in the northern species are atavistic. There are, however, some reasons for doubting whether the three- and four-lobed groups really are primitive. In the first place, five lobes seems to be characteristic of the whole family Caprifoliaceae, as well as related families. In the second, meristic evolution usually proceeds by reduction, and it would seem, on general principles, much easier to derive a three- or four-lobed flower from a five-lobed, than the reverse. Finally, the most

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† Mitt. Deutsch. Dendrolog. Gesellschaft. No. 18. 1909.

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ancient species of *Sambucus* known are in Baltic amber, of Oligocene age, and these actually have the corolla *more* than five-lobed! They are represented by beautifully preserved flowers, figured by Conwentz, *S. multiloba* having a seven-lobed, *S. succinea* a six-lobed corolla. *Sambucus succinea* Conwentz was originally described as *Ilex minor* Caspary, 1881. Conwentz changes the name because he says there is already a species *minor* among living *Sambucus*. This appears to be an error, as no such name occurs either in the work under review or the Index Kewensis; hence *S. succinea* is entitled to the name *Sambucus minor* (Caspary).

In this country, fossil *Sambucus* occurs at Florissant, in the Miocene shales. I have described one species as *S. newtoni* in Amer. Journ. Sci., 1908, p. 541. A second, very distinct by its long tapering leaflets, is represented by the very beautiful specimen figured herewith. It may be diagnosed as follows:

Sambucus amabilis n. sp.

General structure of leaf, including venation, inequilateral bases of upper lateral leaflets, and apparently texture, as in *S. neomexicana* Wooton, but leaflets much longer and more tapering, as the figure shows. The lateral leaflets are at least 100 mm. long, with a maximum breadth of 12 or 13 mm., the apex very long and tapering, quite different from *S. Newtoni*. The marginal teeth are finer than in *S. neomexicana*, being about 4 in 5 mm., instead of 2 or at most 3 as in *neomexicana*. The tapering leaflets are much more like those of *S. canadensis* in outline, but more finely toothed. The type specimen was collected at Station 14, in the Miocene shales of Florissant (*W. P. Cockerell*). As preserved, the leaf is light reddish.

One of the most interesting things in the geographical distribution of living *Sambucus* is the occurrence of a species of the Asiatic group Scyphidanthe in the mountains of German East Africa. This plant was originally described by Engler (Ann. Bot., 1904, p. 537) as *Sambucus ebulus africanus*, but it is really a form of *S. adnata*, and must be known as *Sambucus adnata africana*. By some accident, Count von Schwerin has overlooked Engler's publication.

A point to be investigated in our own flora is the southern extension of *S. melanocarpa* Gray. I have reason for thinking

FIG. 1. *Sambucus amabilis*; Miocene shales of Florissant.

that many of the plants from Colorado so referred may rather pertain to the mut. *oinocarpa* (cf. TORREYA, 1904, p. 58) of *S. microbotrys*.

REVIEWS

Catalogue of the Flowering Plants and Ferns of Connecticut*

In the many contributions to the flora of restricted areas one, of two fundamental ideals, must color the whole tone of the work. One of these aims to present a list of all the plants which are known to grow in the area treated and to outline the local distribution of them. Such a work is subjective, a record of facts, and perhaps the only method that can safely be pursued in a preliminary treatment. At its best it is little more than a carefully prepared record of undigested and often indigestible facts.

Contrasted with this necessary but somewhat prosaic concept is the local flora which aims in some measure to *account* for the distribution of the plants in the area treated. A work of this character must digest the records of previous workers, or else begin the accumulation of new ones, and from this point onwards its aims are objective. It is not merely a record of facts but a projector of ideas. It does not confine itself to recording the occurrence of such a plant at such a place, but seeks to unfold the reason of its occurrence at that place and its non-occurrence elsewhere. That in most cases the attempt is an approximation to failure proves nothing, except the desirability of attempting a work, the failure of which postulates a vastly greater contribution to our knowledge of plants, than is conceivable in the most successful works of the old order.

It must be a matter of regret to those interested in local flora work hereabouts, that the recently issued catalog of Connecticut plants must undeniably be placed under the first of these cat-

* Catalogue of the flowering plants and ferns of Connecticut growing without cultivation. Prepared by a committee of the Connecticut Botanical Club. Published as Bull. 14. Conn. Geol. and Nat. Hist. Survey. 1–569 pp. Hartford. 1910.